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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/581,067

05/31/2006

Franz Schwendemann

3693

2076

7590
Striker Striker & Stenby
103 East Neck Road
Huntington, NY 11743

03/15/2010

EXAMINER

BOES, TERENCE

ART UNIT

PAPER NUMBER

3656

MAIL DATE

DELIVERY MODE

03/15/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/581,067	SCHWENDEMANN, FRANZ	
	Examiner	Art Unit	
	TERENCE BOES	3656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/04/09, 12/23/10</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 1 is objected to because of the following informalities:

Claim 1, line 8 recites "...one face end of the rotor shaft...". It is suggested to replace "...one face end of the rotor shaft..." with - - the face end of the rotor shaft - -.

Claim 1, line 2, recites "the motor vehicle". It is suggested to replace "the motor vehicle" with - - a motor vehicle - -.

Claim 10 recites "wherein the toothed element has a worm gear". The recitation is duplicative of a recitation in claim 1, line 6.

Claim 10 recites "a further gear element (21)". The recitation is duplicative of a recitation in claim 1, lines 5-6.

Claim 11, lines 7-8 recites "wherein the toothed element has an axial bearing face, which rests on one face end of the rotor shaft" and further recites "... wherein said bottom face is formed as an axial bearing face and rests on said at least one face end of the rotor shaft" in lines 12-13. The recitations are duplicative in scope.

Claim 11, line 8 recites "one face end". The recitation - - said one face end - - is suggested to be grammatically correct.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 2, 4-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "...a form lock that is configured to be engaged from the inside by a selected installation tool", rendering the claim indefinite. It is unclear if applicant is intending to claim the inside of the form lock, the inside of the housing, or the inside of something else.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, and 10, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kretzmer Jr. US 2,987,349 in view of Andrei-Alexandru et al. US 4,652,781 and further in view of Torii JP 07015913.

With respect to claim 1 Kretzmer Jr. discloses: a rotor shaft (15), which is supported in a housing (12) and is braced axially on the housing, a separate toothed element (20) for transmitting torque to a gear component (21), wherein said toothed element (20) has a worm gear (20) and is secured to the rotor shaft (15), wherein the

Art Unit: 3656

toothed element (20) further has an axial bracing face (23), wherein said toothed element is braced on an element (24) on the housing (12), wherein said element (24) presses with a predeterminable pressing force against the axial bracing face.

Kretzmer Jr. does not disclose an adjustable adjusting element with a form lock that is configured to be engaged from the inside by a selected installation tool.

Andrei-Alexandru et al. teaches an adjustable adjusting element (35, or 43) with a form lock that is configured to be engaged from the inside by a selected installation tool for the purpose of making adjustable (C6/L23) thus adjusting backlash.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kretzmer Jr. to provide an adjusting element with a form lock that is configured to be engaged from the inside by a selected installation tool, as taught by Andrei-Alexandru et al., for the purpose of making adjustable thus adjusting backlash.

With respect to claim 2, Kretzmer Jr. discloses a motor shaft rotationally engaged inside a gear to drive a gear. Kretzmer Jr. does not disclose an axial bearing face which rests on a bottom face of a bore. Torii teaches an axial bearing face which rests on a bottom face of a bore (@24b). Because both Kretzmer Jr. and Torii teach motor shafts rotationally engaged inside gears to drive gears, it would have been obvious to one having ordinary skill in the art at the time of the invention to substitute a motor shaft inside a gear with an axial bearing face which rests on a bottom face of a bore to achieve the predictable result of driving a gear.

Art Unit: 3656

With respect to claim 10 Kretzmer Jr. discloses: a cone wheel toothing, or a straight or oblique pinion toothing (20 has straight toothing), which meshes with a further gear element (21).

Claims 4 and 5, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kretzmer JR US 2,987,349 in view of Andrei-Alexandru et al. US 4,652,781 in view of Torii JP 07015913A as applied to claim 1 above, and further in view of Hunter et al. US 2003/0048969.

With respect to claim 4, Kretzmer discloses an axial rotary bearing structure as applied to claim 1 above. Kretzmer does not disclose the axial bracing face has a radius and is embodied as a spherical surface.

Hunter teaches the axial bracing face has a radius and is embodied as a spherical surface.

Because both Kretzer and Hunter teach axial rotary bearing structures, it would have been obvious to one having ordinary skill in the art at the time of the invention to substitute an axial rotary bearing structure with the axial bracing face having a radius and embodied as a spherical surface for the predictable result of supporting a rotating shaft.

With respect to claim 5, Kretzmer discloses an axial rotary bearing structure. Kretzmer does not disclose a through opening integrally formed onto the bottom face of the bore and receiving a ball that has the bracing face. Hunter teaches a through opening (92) integrally formed onto the bottom face of the bore and receiving a ball (20,

Art Unit: 3656

22, 24, 26, see figure 10) that has a bracing face. Because both Kretzmer and Hunter teach axial rotary bearing structures, it would have been obvious to one having ordinary skill in the art at the time of the invention to substitute an axial rotary bearing structure provided with a through opening integrally formed onto the bottom face receiving a ball that has a bracing face to achieve the predictable result of axially bearing a rotating member.

Claims 6-9, and 13, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kretzmer Jr. US 2,987,349 in view of Andrei-Alexandru et al. US 4,652,781 in view of Torii JP 07015913 in view of Hunter et al. US 2003/0048969, as applied to claim 5 above, and further in view of Ursel et al. US 6,486,577.

With respect to claims 6, 7 and 9, Kretzmer Jr. discloses all of the claimed subject matter as described above. Kretzmer Jr. does not disclose knurling in an axial portion, wherein in the axial region of the knurling the bore has a lesser inside diameter than in regions of the rotor shaft that are without knurling, and a rotor shaft is connected to a toothed element in a region having knurling via a press fit, and in a region without knurling is connected via a clearance fit.

Ursel teaches knurling (see knurling on shaft 22 between shaft 22 and worm 26) in an axial portion, wherein in the axial region of the knurling the bore has a lesser inside diameter than in regions of the rotor shaft that are without knurling (knurling would deform the bore to have this structure), and a rotor shaft is connected to a toothed element in a region having knurling via a press fit, and in a region without

Art Unit: 3656

knurling is connected via a clearance fit (see shaft 22 fit into worm 26 in figure 1) for the purpose of forming an improved rotational connection, as is well known in the art.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kretzmer Jr. and provide knurling in an axial portion, wherein in the axial region of the knurling the bore has a lesser inside diameter than in regions of the rotor shaft that are without knurling, and a rotor shaft is connected to a toothed element in a region having knurling via a press fit, and in a region without knurling is connected via a clearance fit, as taught by Ursel et al., for the purpose of forming an improved rotational connection, as is well known in the art.

With respect to claim 8, Kretzmer Jr. does not disclose: wherein the rotor shaft, after an integral forming on the radial bump, is through-ground. However, even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

With respect to claim 8, Kretzmer Jr. further discloses the rotor shaft is axially mountable through a bearing sleeve in the housing (shaft is capable of being mounted, in addition see 30).

With respect to claim 13, Kretzmer Jr. discloses: a rotor shaft (15), which is supported in a housing (12) and is braced axially on the housing (12) and a separate

Art Unit: 3656

toothed element (20) for transmitting torque to a gear component (21), wherein said toothed element (20) is secured to the rotor shaft (15), wherein the rotor shaft (15) is connected to the toothed element (20)

Kretzmer Jr. does not disclose an axial bearing face which rests on one face end of a rotor shaft. Torii teaches an axial bearing face which rests on one face end of a rotor shaft (@24b). Because both Kretzmer Jr. and Torii teach motor shafts rotationally engaged inside gears to drive gears, it would have been obvious to one having ordinary skill in the art at the time of the invention to substitute a motor shaft rotationally engaged inside a gear with an axial bearing face which rests on one face end of a rotor shaft to achieve the predictable result of driving a gear.

Kretzmer Jr. does not disclose knurling in an axial portion, wherein in the axial region of the knurling the bore has a lesser inside diameter than in regions of the rotor shaft that are without knurling, and a rotor shaft is connected to a toothed element in a region having knurling via a press fit, and in a region without knurling is connected via a clearance fit.

Ursel teaches knurling (see knurling on shaft 22 between shaft 22 and worm 26) in an axial portion, wherein in the axial region of the knurling the bore has a lesser inside diameter than in regions of the rotor shaft that are without knurling (knurling would deform the bore to have this structure), and a rotor shaft is connected to a toothed element in a region having knurling via a press fit, and in a region without knurling is connected via a clearance fit (see shaft 22 fit into worm 26 in figure 1) for the purpose of forming an improved rotational connection, as is well known in the art.

Art Unit: 3656

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kretzmer Jr. and provide knurling in an axial portion, wherein in the axial region of the knurling the bore has a lesser inside diameter than in regions of the rotor shaft that are without knurling, and a rotor shaft is connected to a toothed element in a region having knurling via a press fit, and in a region without knurling is connected via a clearance fit, as taught by Ursel et al., for the purpose of forming an improved rotational connection, as is well known in the art.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kretzmer Jr. US 2,987,349, in view of Torii JP 07015913 and further in view of JP 53-150356.

Kretzmer Jr. discloses: a rotor shaft (15), which is supported in a housing (12) a separate toothed element (20) for transmitting torque to a gear component (21), wherein said toothed element (20) is secured to the rotor shaft (15), wherein the toothed element (20) has an axial bracing face (23), wherein the toothed element (20) has a bore (see inside of 20 in figure 1), wherein said rotor shaft is connected to said bore of said toothed element via a press-fit connection (shaft 15 is shown pressed into bore of 20), such that the bottom face is oriented transverse to an axis of the rotor shaft (bottom face of 20 is perpendicular to axis of 15).

Kretzmer Jr. discloses a motor shaft rotationally engaged inside a gear to drive a gear. Kretzmer Jr. does not disclose an axial bearing face which rests on one face end of a rotor shaft. Torii teaches an axial bearing face which rests on one face end of a rotor shaft (@24b). Because both Kretzmer Jr. and Torii teach motor shafts rotationally

Art Unit: 3656

engaged inside gears to drive gears, it would have been obvious to one having ordinary skill in the art at the time of the invention to substitute a motor shaft rotationally engaged inside a gear with an axial bearing face which rests on one face end of a rotor shaft to achieve the predictable result of driving a gear.

Kretzmer Jr. in view of Torii does not disclose a press-fit connection extending over only a portion of a length of a bore.

JP 53-150356 teaches a press-fit connection extending over only a portion of a length of a bore. Because Kretzmer Jr., Torii, and JP 53-150356 each disclose mounting motor shafts inside of gears to drive a gear, it would have been obvious to one having ordinary skill in the art at the time of the invention to substitute a motor shaft inside a gear with a press-fit connection extending over only a portion of a length of a bore to achieve the predictable result of driving a gear.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kretzmer Jr. US 2,987,349 in view of Torii JP07015913A in view of Johansson US 405,559.

With respect to claim 12. Kretzmer Jr. discloses: a rotor shaft (15), which is supported in a housing (12) and is braced axially on the housing (12) via at least one face end; and a separate toothed element (20) formed as a worm gear for transmitting torque to a gear component (21), wherein said toothed element (20) is secured to the rotor shaft (15), wherein a through opening (52) is integrally formed onto the bottom face (46) of the bore (44) and receives a ball (56) that has the bracing face (60),

Art Unit: 3656

Kretzmer Jr. does not disclose an axial bearing face, which rests on one of the face ends of the rotor shaft. Torii teaches an axial bearing face which rests on one of the face ends of the rotor shaft (shown at 24b). Because both Kretzmer Jr. and Torii teach motor shafts rotationally engaged inside gears to drive gears, it would have been obvious to one having ordinary skill in the art at the time of the invention to substitute a motor shaft rotationally engaged inside a gear with an axial bearing face resting on a bottom face of a bore to achieve the predictable result of driving a gear.

Kretzmer Jr. does not disclose wherein said through opening is configured to receive said ball such that said ball is axially accommodated over half of its diameter in said through opening.

Johansson teaches a through opening is configured to receive a ball such that said ball is axially accommodated over half of its diameter in said through opening for the purpose of making wear more uniform (Pg. 1/lines 35-67).

It would have been obvious to one having ordinary skill in the art at the time of the invention to provide a through opening is configured to receive a ball such that said ball is axially accommodated over half of its diameter in said through opening for the purpose of making wear more uniform.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 12/23/2009 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TERENCE BOES whose telephone number is (571)272-4898. The examiner can normally be reached on Monday - Friday 9:00 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3656

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Terence Boes/
Examiner, Art Unit 3656

/Thomas R. Hannon/

Primary Examiner, Art Unit 3656